



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Frank O'Bannon
Governor

Lori F. Kaplan
Commissioner

100 North Senate Avenue
P. O. Box 6015
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(317) 232-8603
(800) 451-6027
www.IN.gov/idem

June 8, 2003

Douglas E. Miller
PC Indiana Synthetic Fuels #2, LLC.
719 East 18th Street,
Owensboro, KY 42303

Re: 173-16692-00041
First Significant Permit Modification to:
Part 70 permit No.: T173-13823-00041

Dear Mr. Miller:

PC Indiana Synthetic Fuels #2, LLC was issued Part 70 operating permit T173-13823-00041 on March 19, 2002 for the operation of a synthetic fuel pellet production and curing plant. A letter requesting changes to this permit was received on January 21, 2003. Pursuant to the provisions of 326 IAC 2-7-12 a significant permit modification to this permit is hereby approved as described in the attached Technical Support Document.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter please contact Alic Bent, c/o OAQ, 100 North Senate Avenue, P.O. Box 6015, Indianapolis, Indiana, 46206-6015, or call (973) 575-2555, ext. 3206 or dial (800) 451-6027, press 0 and ask for extension 3-6878.

Sincerely,

Original signed by Paul Dubenetzky
Paul Dubenetzky, Chief
Permits Branch
Office of Air Quality

Attachments
AB/EVP

cc: File - Warrick County
Air Compliance Section Inspector - Scott Anslinger
Compliance Data Section - Karen Nowak
Technical Support and Modeling - Michele Boner
Administrative and Development



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PART 70 OPERATING PERMIT OFFICE OF AIR QUALITY

**PC Indiana Synthetic Fuels #2, LLC
7244 Brammer Road
Lynnville, Indiana 47619**

(herein known as the Permittee) is hereby authorized to operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this permit.

This permit is issued in accordance with 326 IAC 2 and 40 CFR Part 70 Appendix A and contains the conditions and provisions specified in 326 IAC 2-7 as required by 42 U.S.C. 7401, et. seq. (Clean Air Act as amended by the 1990 Clean Air Act Amendments), 40 CFR Part 70.6, IC 13-15 and IC 13-17.

Operation Permit No.: T173-13823-00041	
Issued by: Janet G. McCabe, Assistant Commissioner Office of Air Quality	Issuance Date: March 19, 2002 Expiration Date: March 19, 2007
First Significant Permit Modification 173-16692-00041	Pages Revised: 1, 4, 5, 26 and 27
Issued by:Original signed by Paul Dubenetzky Paul Dubenetzky, Branch Chief Office of Air Quality	Issuance Date: July 8, 2003

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)]
[326 IAC 2-7-5(15)]

This stationary source consists of the following permitted emission units and pollution control devices:

- (a) Two (2) synfuel production and curing operations, identified as EP02a and EP02b, consisting of:
 - (1) two (2) liquid propane gas fired vibrating curing furnaces using natural gas as a backup fuel, identified as Dryers EP02a and EP02b, respectively, each with a maximum capacity of one hundred forty (140) tons of synfuel per hour, each with a rated heat input of 40 million British thermal units (MMBtu) per hour, each using two (2) cyclones as an integral part of the process, and each exhausting through one (1) wet scrubber to stack SV02a and SV02b, respectively;
- (b) Conveying for the synfuel production operations, with maximum capacities of six hundred fifty (650) and two hundred eighty (280) tons of synfuel per hour, for non-thermal curing and thermal curing, respectively, consisting of:
 - (1) one (1) synfuel conveyor (EP01), four (4) dry synfuel conveyors (EP03, EP24, EP25 and EP26), one (1) loadout conveyor (EP06) and one (1) radial loadout conveyor (EP27), each exhausting fugitively;
- (c) Unloading for the synfuel production operations, consisting of:
 - (1) two (2) collection hopper furnace discharges, identified as EP05 and EP07, each with a maximum capacity of one hundred forty (140) tons of synfuel per hour for thermal curing and exhausting fugitively;
 - (2) one (1) truck loading operation, identified as EP08, with maximum capacities of six hundred fifty (650) and two hundred eighty (280) tons of synfuel per hour for non-thermal curing and thermal curing, respectively, and exhausting fugitively;
- (d) Conveying for the synfuel production operations, consisting of:
 - (1) two (2) feed bins with variable speed feed conveyors (EP14 and EP15), two (2) synfuel feed conveyors (EP19 and EP20), one (1) feed bin (EP22), one (1) feed bin conveyor (EP23), each with maximum capacities of 325 and 140 tons per hour for non-thermal curing and thermal curing, respectively, and exhausting fugitively;
 - (2) one (1) pugmill conveyor (EP17) and one (1) mixer product conveyor (EP18), each with maximum capacities of 650 and 280 tons per hour for non-thermal curing and thermal curing, respectively, and exhausting fugitively;
 - (3) one (1) finished product collecting conveyor (EP09) and one (1) synfuel transfer conveyor (EP10), each with a maximum capacity of 650 tons of synfuel per hour for non-thermal curing, and exhausting fugitively;
 - (4) one (1) recycle conveyor (EP21) with maximum capacities of 3.5 and 2.0 tons of synfuel per hour for non-thermal curing and thermal curing, respectively, and exhausting fugitively.

- (e) Conveying for the synfuel production operations, with a maximum capacity of fifty (50) tons of synfuel per hour for both non-thermal and thermal curing, consisting of:
 - (1) one (1) feed conveyor (EP11), one (1) mixer feed conveyor (EP12) and one (1) pugmill conveyor (EP13), each exhausting fugitively;
- (f) Screening for the synfuel production operations, with maximum capacities of six hundred fifty (650) and two hundred eighty (280) tons of synfuel per hour, for non-thermal and thermal curing, respectively, consisting of:
 - (1) one (1) plant protection screen (EP16), exhausting fugitively; and
- (g) One (1) radial stacker, identified as EP04, for the synfuel production operations, with a maximum capacity of fifty (50) tons of synfuel per hour for both non-thermal and thermal curing and exhausting fugitively.

SECTION D.1 FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

- (a) Two (2) synfuel production and curing operations, identified as EP02a and EP02b, consisting of:
 - (1) two (2) liquid propane gas fired vibrating curing furnaces using natural gas as a backup fuel, identified as Dryers EP02a and EP02b, respectively, each with a maximum capacity of one hundred forty (140) tons of synfuel per hour, each with a rated heat input of 40 million British thermal units (MMBtu) per hour, each using two (2) cyclones as an integral part of the process, and each exhausting through one (1) wet scrubber to stack SV02a and SV02b, respectively;
- (b) Conveying for the synfuel production operations, with maximum capacities of six hundred fifty (650) and two hundred eighty (280) tons of synfuel per hour, for non-thermal curing and thermal curing, respectively, consisting of:
 - (1) one (1) synfuel conveyor (EP01), four (4) dry synfuel conveyors (EP03, EP24, EP25 and EP26), one (1) loadout conveyor (EP06), one (1) radial loadout conveyor (EP27), each exhausting fugitively;
- (c) Unloading for the synfuel production operations, consisting of:
 - (1) two (2) collection hopper furnace discharges, identified as EP05 and EP07, each with a maximum capacity of one hundred forty (140) tons of synfuel per hour for thermal curing and exhausting fugitively;
 - (2) one (1) truck loading operation, identified as EP08, with maximum capacities of six hundred fifty (650) and two hundred eighty (280) tons of synfuel per hour for non-thermal and thermal curing, respectively, and exhausting fugitively;
- (d) Conveying for the synfuel production operations, consisting of:
 - (1) two (2) feed bins with variable speed feed conveyors (EP14 and EP15), two (2) synfuel feed conveyors (EP19 and EP20), one (1) feed bin (EP22), one (1) feed bin conveyor (EP23), each with maximum capacities of 325 and 140 tons of synfuel per hour for non-thermal curing and thermal curing, respectively, and exhausting fugitively;
 - (2) one (1) pugmill conveyor (EP17) and one (1) mixer product conveyor (EP18), each with maximum capacities of 650 and 280 tons of synfuel per hour for non-thermal curing and thermal curing, respectively, and exhausting fugitively;
 - (3) one (1) finished product collecting conveyor (EP09) and one (1) synfuel transfer conveyor (EP10), each with maximum capacities of 650 tons of synfuel per hour for non-thermal curing, and exhausting fugitively;
 - (4) one (1) recycle conveyor (EP21) with maximum capacities of 3.5 and 2.0 tons of synfuel per hour for non-thermal and thermal curing, respectively, and exhausting fugitively.
- (e) Conveying for the synfuel production operations, with a maximum capacity of fifty (50) tons of synfuel per hour for both non-thermal and thermal curing, consisting of:
 - (1) one (1) feed conveyor (EP11), one (1) mixer feed conveyor (EP12) and one (1) pugmill conveyor (EP13), each exhausting fugitively;
- (f) Screening for the synfuel production operations, with maximum capacities of six hundred fifty (650) and two hundred eighty (280) tons of synfuel per hour, for non-thermal and thermal curing, respectively, consisting of:
 - (1) one (1) plant protection screen (EP16), exhausting fugitively; and
- (g) One (1) radial stacker, identified as EP04, for the synfuel production operations, with a maximum capacity of fifty (50) tons of synfuel per hour for both non-thermal and thermal curing and exhausting fugitively.

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Particulate Matter (PM) [326 IAC 6-3-2(c)]

- (a) The particulate matter (PM) from the synfuel production and curing operation shall be limited by the following equation when operating the thermally cured scenario:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Emission Unit	Process Weight Rate (tons/hr)	Allowable PM Emissions (326 IAC 6-3-2) (lb/hr)
synthetic fuel production and curing operation, EP02a	140	54.72
synthetic fuel production and curing operation, EP02b	140	54.72

The synfuel production and curing operation, identified as EP02a and EP02b, utilizes dual cyclones and wet scrubbers for particulate matter control in order to comply with 326 IAC 6-3-2 (Process Operations). The particulate matter emissions from the rest of the source are in compliance with 326 IAC 6-3-2 without any add on control equipment.

- (b) The particulate from the synfuel production and curing operation shall be limited by the following when operating the non-thermally cured scenario:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Facilities	Process Weight Rate (tons/hr)	Allowable PM Emissions (326 IAC 6-3-2) (lb/hr)
Conveyors (EP01, EP03, EP06, EP09, EP17, EP18)	650 each	72.14 each
Truck Loading (EP08)	650	72.14
Transfer (EP10)	650	72.14
Screen (EP16)	650	72.14
Feed Bins w/ variable speed conveyors (EP14 and EP15)	325 each	63.91 each
Feed Conveyors (EP19 and EP20)	325 each	63.91 each

**Indiana Department of Environmental Management
Office of Air Quality**

**Addendum to the
Technical Support Document (TSD) for a Part 70 Permit Significant Permit
Modification**

Source Name:	PC Indiana Synthetic Fuels #2, LLC
Source Location:	7244 Brammer Road, Lynnville, Indiana 47619
SIC Code:	2999
County:	Warrick
Operation Permit No.:	SPM173-16692-00041
Permit Reviewer:	Alic Bent /EVP

On May 22, 2003, the Office of Air Quality (OAQ) had a notice published in the Boonville Standard in Boonville, Indiana, stating that PC Indiana Synthetic Fuels #2, LLC had applied for a Part 70 Significant Permit Modification for modifications to their material handling operations. The notice also stated that OAQ proposed to issue a Significant Permit Modification for this construction and provided information on how the public could review the proposed Significant Permit Modification and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this Part 70 Significant Permit Modification should be issued as proposed.

On June 23, 2003, Eric T. Parsley, Project Engineer at Commonwealth Engineers, Inc. submitted comments on behalf of PC Indiana Synthetic Fuels #2, LLC on the proposed permit. The summary of the comments and corresponding responses is as follows (bolded language has been added and the language with a line through it has been deleted):

Comment #1

Permit Cover Page

Please correct the spelling of Lynnville

Response #1

The address on the permit cover page has been revised as follows:

**PC Indiana Synthetic Fuels #2, LLC
7244 Brammer Road
~~Lynnsville~~ Lynnville, Indiana 47619**

Comment #2

Please replace all references to “synthetic fuel pellets” and “pellets”, with simply “synfuel”. This is the correct name for the product. The pellet description is no longer used. Please remove all references to “pellets” in the permit. The tables included with the application that summarize the operating scenarios contain the appropriate description for each emission unit.

Response #2

All references to “synthetic fuel pellets” and “pellets” in Sections A.2 and D.1 have been replaced with “synfuel” as follows:

- (a) Two (2) ~~synthetic fuel pellet~~ **synfuel** production and curing operations, identified as EP02a and EP02b, consisting of:
 - (1) two (2) liquid propane gas fired vibrating curing furnaces using natural gas as a backup fuel, identified as Dryers EP02a and EP02b, respectively, each with a maximum capacity of one hundred forty (140) tons of ~~pellets~~ **synfuel** per hour, each with a rated heat input of 40 million British thermal units (MMBtu) per hour, each using two (2) cyclones as an integral part of the process, and each exhausting through one (1) wet scrubber to stack SV02a and SV02b, respectively;
- (b) Conveying for the ~~synthetic fuel pellet~~ **synfuel** production operations, with maximum capacities of six hundred fifty (650) and two hundred eighty (280) tons of ~~pellets~~ **synfuel** per hour, for non-thermal curing and thermal curing, respectively, consisting of:
 - (1) one (1) ~~pellet~~ **synfuel** conveyor (EP01), four (4) dry ~~pellet~~ **synfuel** conveyors (EP03, EP24, EP25 and EP26), one (1) loadout conveyor (EP06) and one (1) radial loadout conveyor (EP27), each exhausting fugitively;
- (c) Unloading for the ~~synthetic fuel pellet~~ **synfuel** production operations, with a maximum capacity of two hundred eighty (280) tons per hour, consisting of:
 - (1) two (2) collection hopper furnace discharges, identified as EP05 and EP07, each with a maximum capacity of one hundred forty (140) tons of ~~pellets~~ **synfuel** per hour and exhausting fugitively;
 - (2) one (1) truck loading operation, identified as EP08, with a maximum capacity of two hundred eighty (280) tons of ~~pellets~~ **synfuel** per hour and exhausting fugitively;
- (d) Conveying for the ~~synthetic fuel pellet~~ **synfuel** production operations, with maximum capacities of 325 and 140 tons of ~~synthetic fuel~~ per hour for non-thermal curing and thermal curing, respectively, consisting of:
 - (1) two (2) feed bins with variable speed feed conveyors (EP14 and EP15), two (2) ~~pellet~~ **synfuel** feed conveyors (EP19 and EP20), one (1) feed bin (EP22), one (1) feed bin conveyor (EP23), each exhausting fugitively;
 - (2) one (1) pugmill conveyor (EP17), one (1) mixer product conveyor (EP18), one (1) finished product collecting conveyor (EP09) and one (1) ~~pellet~~ **synfuel** transfer conveyor (EP10), each exhausting fugitively;

- (3) one (1) recycle conveyor (EP21) with a maximum capacityies of **3.5 and 2 two** (2) tons of ~~pellets~~ **synfuel** per hour for non-thermal curing and thermal curing, respectively and exhausting fugitively.
- (e) Conveying for the ~~synthetic fuel pellet~~ **synfuel** production operations, with a maximum capacity of fifty (50) tons of ~~synthetic fuel~~ **synfuel** per hour for both non-thermal and thermal curing, consisting of:
 - (1) one (1) feed conveyor (EP11), one (1) mixer feed conveyor (EP12) and one (1) pugmill conveyor (EP13), each exhausting fugitively;
- (f) Screening for the ~~synthetic fuel pellet~~ **synfuel** production operations, with maximum capacities of six hundred fifty (650) and two hundred eighty (280) tons of ~~pellets~~ **synfuel** per hour, for non-thermal and thermal curing, respectively, consisting of:
 - (1) one (1) plant protection screen (EP16), exhausting fugitively; and
- (g) One (1) radial stacker, identified as EP04, for the ~~synthetic fuel pellet~~ **synfuel** production operations, with a maximum capacity of fifty (50) tons of ~~pellets~~ **synfuel** per hour for both non-thermal and thermal curing and exhausting fugitively.

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Particulate Matter (PM) [326 IAC 6-3-2(c)]

- (a) The particulate matter (PM) from the ~~synthetic fuel pellet~~ **synfuel** production and curing operation shall be limited by the following equation when operating the thermally cured scenario:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Emission Unit	Process Weight Rate (tons/hr)	Allowable PM Emissions (326 IAC 6-3-2) (lb/hr)
synthetic fuel production and curing operation, EP02a	140	54.72
synthetic fuel production and curing operation, EP02b	140	54.72

The ~~synthetic fuel pellet~~ **synfuel** production and curing operation, identified as EP02a and EP02b, utilizes dual cyclones and wet scrubbers for particulate matter control in order to comply with 326 IAC 6-3-2 (Process Operations). The particulate matter emissions from the rest of the source are in compliance with 326 IAC 6-3-2 without any add on control equipment.

- (b) The particulate from the ~~synthetic fuel pellet~~ **synfuel** production and curing operation shall be limited by the following when operating the non-thermally cured scenario:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Facilities	Process Weight Rate (tons/hr)	Allowable PM Emissions (326 IAC 6-3-2) (lb/hr)
Conveyors (EP01, EP03, EP06, EP09, EP17, EP18)	650 each	72.14 each
Truck Loading (EP08)	650	72.14
Transfer (EP10)	650	72.14
Screen (EP16)	650	72.14
Feed Bins w/ variable speed conveyors (EP14 and EP15)	325 each	63.91 each
Feed Conveyors (EP19 and EP20)	325 each	63.91 each

Comment #3

Section A.2(c) and D.1(c)

Please include language in the description to clarify that the production rates indicated for EP05, EP07, and EP08 are for thermally cured synfuel.

Response #3

The language in the description in Section A.2(c) and D.1(c) has been revised to clarify the operating scenarios for each emission unit.

- (c) Unloading for the ~~synthetic fuel pellet~~ **synfuel** production operations, ~~with a maximum capacity of two hundred eighty (280) tons per hour~~, consisting of:
- (1) two (2) collection hopper furnace discharges, identified as EP05 and EP07, each with a maximum capacity of one hundred forty (140) tons of ~~pellets~~ **synfuel** per hour **for thermal curing**, and exhausting fugitively;
 - (2) one (1) truck loading operation, identified as EP08, with ~~a maximum capacity of~~ **two hundred eighty (280) tons of pellets synfuel** per hour **for non-thermal curing and thermal curing, respectively**, and exhausting fugitively;

Comment #4

Section A.2(d) and D.1(d)

The maximum production rates listed in the description for emission units EP09, EP10, EP17, EP18, and EP21 are incorrect. The correct production rates are as follows:

EP09 and EP10	650 tons/hr Non-thermally cured synthetic fuel 0 tons/hr Thermally cured synthetic fuel
EP17 and EP18	650 tons/hr Non-thermally cured synthetic fuel 280 tons/hr Thermally cured synthetic fuel

EP21 3.5 tons/hr Non-thermally cured synthetic fuel
 2.0 tons/hr Thermally cured synthetic fuel

Response #4

The maximum production rates listed in the description in Section A.2(d) and D.1(d) for emission units EP09, EP10, EP17, EP18, and EP21 have been corrected. The correct maximum production rates were used in the 326 IAC 6-3 calculations.

- (d) Conveying for the ~~synthetic-fuel pellet~~ **synfuel** production operations, ~~with maximum capacities of 325 and 140 tons of synthetic fuel per hour for non-thermal curing and thermal curing, respectively,~~ consisting of:
- (1) two (2) feed bins with variable speed feed conveyors (EP14 and EP15), two (2) ~~pellet synfuel~~ feed conveyors (EP19 and EP20), one (1) feed bin (EP22), one (1) feed bin conveyor (EP23), each **with maximum capacities of 325 and 140 tons of synfuel per hour for non-thermal curing and thermal curing, respectively, and** exhausting fugitively;
 - (2) one (1) pugmill conveyor (EP17); **and** one (1) mixer product conveyor (EP18), ~~one (1) finished product collecting conveyor (EP09) and one (1) pellet synfuel transfer conveyor (EP10), each with maximum capacities of 650 and 280 tons~~ **of synfuel per hour for non-thermal curing and thermal curing, respectively, and** exhausting fugitively;
 - (3) **one (1) finished product collecting conveyor (EP09) and one (1) synfuel transfer conveyor (EP10), each with a maximum capacity of 650 tons of synfuel per hour for non-thermal curing, and exhausting fugitively;**
 - ~~(3)~~(4) one (1) recycle conveyor (EP21) with ~~a maximum capacityies of 3.5 and 2.0 two~~ **(2) tons of pellets synfuel per hour for non-thermal curing and thermal curing, respectively, and** exhausting fugitively.

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a Significant Permit Modification to a Part 70 Operating Permit

Source Background and Description

Source Name:	PC Indiana Synthetic Fuels #2, LLC.
Source Location:	7244 Brammer Road, Lynnville, Indiana 47619
County:	Warrick
SIC Code:	2999
Operation Permit No.:	T173-13823-00041
Operation Permit Issuance Date:	March 19, 2002
Permit Modification No.:	SPM173-16692-00041
Permit Reviewer:	Alic Bent/EVP

The Office of Air Quality (OAQ) has reviewed a modification application from PC Indiana Synthetic Fuels #2, LLC relating to the operation of a synthetic fuel pellet production and curing operation.

History

On January 21, 2003, PC Indiana Synthetic Fuels #2, LLC submitted an application to the OAQ requesting the following changes to their existing Part 70 Operating Permit:

- (a) Adding the following activities with uncontrolled potential emissions below exemption level:
 - (1) one (1) new feed hopper(EP22), with maximum capacities of 325 tons of synthetic fuel per hour for non-thermal curing and 140 tons of synthetic fuel per hour for thermal curing and exhausting fugitively;
 - (2) one (1) feed bin conveyor (EP23), with maximum capacities of 325 tons of synthetic fuel per hour for non-thermal curing and 140 tons of synthetic fuel per hour for thermal curing and exhausting fugitively;
 - (3) three (3) synfuel conveyors (EP24, EP25 and EP26), with maximum capacities of 650 tons of synthetic fuel per hour for non-thermal curing and 280 tons of synthetic fuel per hour for thermal curing and exhausting fugitively;
 - (4) one (1) radial loadout conveyor (EP27), with maximum capacities of 650 tons of synthetic fuel per hour for non-thermal curing and 280 tons of synthetic fuel per hour for thermal curing and exhausting fugitively.

The total uncontrolled potential to emit PM and PM-10 from the above activities are 4.56 and 2.14 tons per year, respectively (see Appendix A: page 1 of 1). These potential emissions are less than the exemption threshold as described in 326 IAC 2-1.1-3(e)(1)(A).

- (b) The source requested the correction of the maximum production rates for conveyors EP04, EP11, EP12 and EP13. The source has determined that the maximum production rate for the conveyors were incorrectly estimated at 280 tons per hour and that the correct maximum production rate through the conveyors are actually 50 tons per hour.
- (c) The source requested the addition of alternate production limits based on the non-thermally cured operating scenario. The current permit is based on the production of thermally cured synthetic fuel. The thermal curing operating scenario involves processing the synthetic fuel through vibratory furnaces. These furnaces limit the maximum production through the entire operation to 280 tons of synthetic fuel per hour. However, there is an alternate operating scenario for producing synthetic fuel that is not thermally cured. If non-thermally cured synthetic fuel is produced, the vibratory furnaces do not operate and the maximum production rate increases to 650 tons of synthetic fuel per hour. Since the vibratory furnaces are not used for the non-thermally cured operating scenario, the emissions are significantly less even with a higher production rate. The thermally cured synthetic fuel operating scenario and the non-thermally cured operating scenario are mutually exclusive since no materials can bypass the vibratory furnaces when they are being used.

Existing Approvals

The source was issued a Part 70 Operating Permit T173-13823-00041 on March 19, 2002.

Enforcement Issue

There are no enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the Significant Permit Modification be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on January 21, 2003.

Emission Calculations

See Appendix A: page 1 through 1 of this document for detailed emissions calculations.

Potential To Emit Before Controls (Modification)

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA."

Pollutant	Potential To Emit (tons/year)
PM	4.52
PM-10	2.14
SO ₂	--
VOC	--
CO	--
NO _x	--

Justification for Modification

Since the source is (1) adding equipment with potential emissions less than the exemption level, (2) reducing the production rate for conveyors EP04, EP11, EP12 and EP13 from 280 tons per hour to 50 tons per hour, and (3) adding an alternative operating scenario without increasing potential emissions, pursuant to 326 IAC 2-1.1-3(e), a source modification is not required for the application. However, the Title V permit is being modified through a Significant Permit Modification. This modification is being performed pursuant to 326 IAC 2-7-12(d)(1) because the maximum production rate increases from 280 tons of synthetic fuel per hour when producing thermally cured synthetic fuel to 650 tons of synthetic fuel per hour when producing non-thermally cured synthetic fuel and the allowable PM emissions increase from 62.22 to 72.14 pounds per hour, respectively.

County Attainment Status

The source is located in Warrick County.

Pollutant	Status
PM-10	attainment
SO ₂	unclassifiable
NO ₂	attainment
Ozone	attainment
CO	attainment
Lead	attainment

- (a) Volatile organic compounds (VOC) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Warrick County has been designated as attainment or unclassifiable for ozone.

Source Status

Existing Source PSD or Emission Offset Definition (emissions after controls, based upon 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	greater than 100, less than 250
PM-10	greater than 100, less than 250
SO ₂	less than 100
VOC	less than 100
CO	less than 100
NO _x	less than 100

- (a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not one of the 28 listed source categories.
- (b) These emissions are based upon Part 70 permit T173-13823-00041, issued March 19, 2002.

Potential to Emit After Controls for the Modification

The table below summarizes the total potential to emit, reflecting all limits, of the significant emission units for the modification.

	Potential to Emit (tons/year)						
Process/facility	PM	PM-10	SO ₂	VOC	CO	NO _x	HAPs
Material Handling Equipments (EP22 - EP27)	4.52	2.14	--	--	--	--	--
Existing Units	239.3	239.3	0.21	1.93	29.43	70.86	--
Total Emissions	243.82	243.82	0.21	1.93	29.43	70.86	--

This modification to an existing minor stationary source is not major because the source wide emissions remained at the PSD minor source levels. Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable for this modification.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable for this modification.

State Rule Applicability - Individual Facilities

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

- (a) Pursuant to 326 IAC 6-3-1(b)(14), EP22 - EP27 are exempt from 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes) when operating both the non-thermally and thermally cured scenarios because the uncontrolled potential to emit from each unit is less than 0.551 pound per hour.
- (b) The particulate from the synthetic fuel pellet production and curing operation shall be limited by the following when operating the non-thermally cured scenario:

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Facilities	Process Weight Rate (tons/hr)	Uncontrolled PM emissions (lb/hr)	PM Allowable Emissions (lb/hr)
Conveyors (EP01, EP03, EP06, EP09, EP17, EP18)	650 each	6.5 each	72.14 each
Truck Loading (EP08)	650	0.65	72.14
Transfer (EP10)	650	6.5	72.14
Screen (EP16)	650	5.2	72.14
Feed Bins w/ variable speed conveyors (EP14 and EP15)	325 each	3.25 each	63.91 each
Feed Conveyors (EP19 and EP20)	325 each	3.25 each	63.91 each

The particulate matter emissions from all the units are in compliance with the requirements of 326 IAC 6-3-2 without any add on equipment.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAQ, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

There are no new compliance monitoring requirements applicable for the modification to this source.

Proposed Changes to the Part 70 Operating Permit

The following changes are made as the First Significant Permit Modification 173-16692-00041 to Part 70 Operating Permit No. T173-13823-00041 (new language shown in bold and deleted language shown with a line through it):

- (1) The following changes have been made to Section A.2.

A.2 Emission Units and Pollution Control Equipment Summary [326 IAC 2-7-4(c)(3)]
~~[326 IAC 2-7-5(15)]~~

This stationary source consists of the following permitted emission units and pollution control devices:

- (a) Two (2) synthetic fuel pellet production and curing operations, identified as EP02a and EP02b, consisting of:
- (1) two (2) liquid propane gas fired vibrating curing furnaces using natural gas as a backup fuel, identified as Dryers EP02a and EP02b, respectively, each with a maximum capacity of one hundred forty (140) tons of pellets per hour, each with a rated heat input of 40 million British thermal units (MMBtu) per hour, each using two (2) cyclones as an integral part of the process, and each exhausting through one (1) wet scrubber to stack SV02a and SV02b, respectively;
- (b) Conveying for the synthetic fuel pellet production operations, with ~~a~~ maximum capacity **ies of six hundred fifty (650) and two hundred eighty (280) tons of pellets per hour, for non-thermal and thermal curing, respectively,** consisting of:
- (1) one (1) pellet conveyor (EP01), **four (4) one (1) dry pellet conveyors (EP03, EP24, EP25 and EP26),** one (1) loadout conveyor (EP06) **and one (1) radial loadout conveyor (EP27),** each ~~with a maximum capacity of two hundred eighty (280) tons of pellets per hour and~~ exhausting fugitively;
- (c) Unloading for the synthetic fuel pellet production operations, ~~with a maximum capacity of two hundred eighty (280) tons per hour,~~ consisting of:
- (1) two (2) collection hopper furnace discharges, identified as EP05 and EP07, each with a maximum capacity of one hundred forty (140) tons of pellets per hour **for thermal curing** and exhausting fugitively;
 - (2) one (1) truck loading operation, identified as EP08, with ~~a~~ maximum capacity **ies of six hundred fifty (650) and two hundred eighty (280) tons of pellets per hour, for non-thermal and thermal curing, respectively,** and exhausting fugitively;
- (d) Conveying for the synthetic fuel pellet production operations, **with maximum capacities of three hundred twenty five (325) and one hundred forty (140) tons of synthetic fuel per hour for non-thermal and thermal curing, respectively,** consisting of:
- (1) two (2) feed bins with variable speed feed conveyors (EP14 and EP15), two (2) pellet feed conveyors (EP19 and EP20), **one (1) feed bin (EP22) and one (1) feed bin conveyor (EP23),** each ~~with a maximum capacity of one hundred forty (140) tons of pellets per hour and~~ exhausting fugitively;
 - (2) one (1) ~~feed conveyor (EP11), one (1) mixer feed conveyor (EP12), two (2) pugmill conveyors (EP13 and EP17), one (1) mixer product conveyor (EP18), one (1) finished product collecting conveyor (EP09) and one (1) pellet transfer conveyor (EP10), each with a maximum capacity of two hundred eighty (280) tons of pellets per hour and~~ exhausting fugitively;

- (3) one (1) recycle conveyor (EP21) with a maximum capacity of two (2) tons of pellets per hour and exhausting fugitively.
- (e) **Conveying for the synthetic fuel pellet production operations, with a maximum capacity of fifty (50) tons of synthetic fuel per hour for both non-thermal and thermal curing, consisting of:**
 - (1) **one (1) feed conveyor (EP11), one (1) mixer feed conveyor (EP12) and one (1) pugmill conveyor (EP13), each exhausting fugitively;**
- (f) Screening for the synthetic fuel pellet production operations, with a maximum capacity ~~ies~~ of **six hundred fifty (650) and** two hundred eighty (280) tons of pellets per hour, **for non-thermal and thermal curing, respectively**, consisting of:
 - (1) one (1) plant protection screen (EP16), ~~with a maximum capacity of two hundred eighty (280) tons of pellets per hour and~~ exhausting fugitively; and
- (fg) One (1) radial stacker, identified as EP04, for the synthetic fuel pellet production operations, with a maximum capacity of **fifty (50)** ~~two hundred eighty (280)~~ tons of pellets per hour **for both non-thermal and thermal curing** and exhausting fugitively.

- (2) The following revisions have been made to the facility description box in Section D.1.

SECTION D.1

FACILITY OPERATION CONDITIONS

Facility Description [326 IAC 2-7-5(15)]

- (a) Two (2) synthetic fuel pellet production and curing operations, identified as EP02a and EP02b, consisting of:
- (1) two (2) liquid propane gas fired vibrating curing furnaces using natural gas as a backup fuel, identified as Dryers EP02a and EP02b, respectively, each with a maximum capacity of one hundred forty (140) tons of pellets per hour, each with a rated heat input of 40 million British thermal units (MMBtu) per hour, each using two (2) cyclones as an integral part of the process, and each exhausting through one (1) wet scrubber to stack SV02a and SV02b, respectively;
- (b) Conveying for the synthetic fuel pellet production operations, with ~~a~~ maximum capacities of **six hundred fifty (650) and two hundred eighty (280) tons of pellets per hour, for non-thermal curing and thermal curing, respectively**, consisting of:
- (1) one (1) pellet conveyor (EP01), ~~four (4) one (1) dry pellet conveyors (EP03, EP24, EP25 and EP26), one (1) loadout conveyor (EP06) and one (1) radial loadout conveyor (EP27), each with a maximum capacity of two hundred eighty (280) tons of pellets per hour and exhausting fugitively;~~
- (c) Unloading for the synthetic fuel pellet production operations, ~~with a maximum capacity of two hundred eighty (280) tons per hour~~, consisting of:
- (1) two (2) collection hopper furnace discharges, identified as EP05 and EP07, each with a maximum capacity of one hundred forty (140) tons of pellets per hour **for thermal curing** and exhausting fugitively;
- (2) one (1) truck loading operation, identified as EP08, with ~~a~~ maximum capacities of **six hundred fifty (650) and two hundred eighty (280) tons of pellets per hour, for non-thermal and thermal curing, respectively**, and exhausting fugitively;
- (d) Conveying for the synthetic fuel pellet production operations, **with maximum capacities of 325 and 140 tons of synthetic fuel per hour for non-thermal curing and thermal curing, respectively**, consisting of:
- (1) two (2) feed bins with variable speed feed conveyors (EP14 and EP15), two (2) pellet feed conveyors (EP19 and EP20), **one (1) feed bin (EP22) and one (1) feed bin conveyor (EP23)**, each ~~with a maximum capacity of one hundred forty (140) tons of pellets per hour and exhausting fugitively;~~
- (2) ~~one (1) feed conveyor (EP11), one (1) mixer feed conveyor (EP12), two (2) pugmill conveyors (EP13 and EP17), one (1) mixer product conveyor (EP18), one (1) finished product collecting conveyor (EP09), one (1) pellet transfer conveyor (EP10), each with a maximum capacity of two hundred eighty (280) tons of pellets per hour and exhausting fugitively;~~
- (3) one (1) recycle conveyor (EP21) with a maximum capacity of two (2) tons of pellets per hour and exhausting fugitively.
- (e) **Conveying for the synthetic fuel pellet production operations, with a maximum capacity of fifty (50) tons of synthetic fuel per hour for both non-thermal and thermal curing, consisting of:**
- (1) **one (1) feed conveyor (EP11), one (1) mixer feed conveyor (EP12) and one (1) pugmill conveyor (EP13), each exhausting fugitively;**
- (f) Screening for the synthetic fuel pellet production operations, with ~~a~~ maximum capacities of **six hundred fifty (650) and two hundred eighty (280) tons of pellets per hour, for non-thermal and thermal curing, respectively**, consisting of:
- (1) one (1) plant protection screen (EP16), ~~with a maximum capacity of two hundred eighty (280) tons of pellets per hour and exhausting fugitively; and~~
- (g) One (1) radial stacker, identified as EP04, for the synthetic fuel pellet production operations, with a maximum capacity of **fifty (50) two hundred eighty (280) tons of pellets per hour for both non-thermal and thermal curing** and exhausting fugitively.

- (3) The following revisions have been made to add alternate production limits based on the non-thermally cured operating scenario:

Emission Limitations and Standards [326 IAC 2-7-5(1)]

D.1.1 Particulate Matter (PM) [326 IAC 6-3-2(c)]

- (a) The particulate matter (PM) from the synthetic fuel pellet production and curing operation shall be limited by the following equation **when operating the thermally cured scenario:**

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Emission Unit	Process Weight Rate (tons/hr)	Allowable PM Emissions (326 IAC 6-3-2) (lb/hr)
synthetic fuel production and curing operation, EP02a	140	54.72
synthetic fuel production and curing operation, EP02b	140	54.72

The synthetic fuel pellet production and curing operation, identified as EP02a and EP02b, utilizes dual cyclones and wet scrubbers for particulate matter control in order to comply with 326 IAC 6-3-2 (Process Operations). The particulate matter emissions from the rest of the source are in compliance with 326 IAC 6-3-2 without any add on control equipment.

- (b) **The particulate from the synthetic fuel pellet production and curing operation shall be limited by the following when operating the non-thermally cured scenario:**

Interpolation and extrapolation of the data for the process weight rate in excess of sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 55.0 P^{0.11} - 40 \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

Facilities	Process Weight Rate (tons/hr)	Allowable PM Emissions (326 IAC 6-3-2) (lb/hr)
Conveyors (EP01, EP03, EP06, EP09, EP17, EP18)	650 each	72.14 each
Truck Loading (EP08)	650	72.14
Transfer (EP10)	650	72.14
Screen (EP16)	650	72.14
Feed Bins w/ variable speed conveyors (EP14 and EP15)	325 each	63.91 each
Feed Conveyors (EP19 and EP20)	325 each	63.91 each

Conclusion

The modification to this synthetic fuel pellet production and curing operation shall be subject to the conditions of the attached proposed Significant Permit Modification No. 173-16692-00041.

Appendix A: Emission Calculations

Page 1 of 1

Company Name: PC Indiana Synthetic Fuels #2, LLC
Address City IN Zip: 7244 Brammer Road, Lynnville, IN 47619
SPM No.: 173-16692-00041
Reviewer: Alic Bent/EVP
Date: March 19, 2003

Table 1 - Emission Factors

	Emission Factor	
	lb PM / ton	lb PM10 / ton
Thermally Cured	0.00053	0.00025
Non-Thermally Cured	0.00032	0.00015

Table 2 - Operating Scenario #1, Thermally Cured Synthetic Fuel (ton/yr)

ID Number	Process	Maximum Rate (tons/hr)	PM Emission Factor (lbs/tons)	PM-10 Emission Factor (lbs/tons)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM-10 Emissions (tons/yr)
EP22	Feed Bin	140	0.00053	0.00025	0.33	0.15
EP23	Feed Bin Conveyor	140	0.00053	0.00025	0.33	0.15
EP24	Dry Synfuel Conveyor	280	0.00053	0.00025	0.65	0.31
EP25	Dry Synfuel Conveyor	280	0.00053	0.00025	0.65	0.31
EP26	Dry Synfuel Conveyor	280	0.00053	0.00025	0.65	0.31
EP27	Radial Loadout Conveyor	280	0.00053	0.00025	0.65	0.31

Uncontrolled Emissions = 3.26 1.54

Table 3 - Operating Scenario #2, Non-Thermally Cured Synthetic Fuel (ton/yr)

ID Number	Process	Maximum Rate (tons/hr)	PM Emission Factor (lbs/tons)	PM-10 Emission Factor (lbs/tons)	Uncontrolled PM Emissions (tons/yr)	Uncontrolled PM-10 Emissions (tons/yr)
EP22	Feed Bin	325	0.00032	0.00015	0.45	0.21
EP23	Feed Bin Conveyor	325	0.00032	0.00015	0.45	0.21
EP24	Dry Synfuel Conveyor	650	0.00032	0.00015	0.90	0.43
EP25	Dry Synfuel Conveyor	650	0.00032	0.00015	0.90	0.43
EP26	Dry Synfuel Conveyor	650	0.00032	0.00015	0.90	0.43
EP27	Radial Loadout Conveyor	650	0.00032	0.00015	0.90	0.43

Uncontrolled Emissions = 4.52 2.14

Calculations

Emission Factors from AP-42 Chapter 13.2.4

$$EF = k(0.0032) \times (U/5)^{1.3} / (M/2)^{1.4}$$

where:

U = Mean wind speed (mph) =

M = Material moisture content (%) =

k = Particle size multiplier (dimensionless) =

8	
9	for thermally cured
13	for non-thermally cured
0.74	for PM
0.35	for PM-10

METHODOLOGY

Potential Emissions = EF x Rate (tons/hr) x 8760 hr/yr x 1 ton/2000 lbs

There are no control equipments for these units.